



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	)	
CURRY, Randy Dale et al.	)	Art Unit: 1744
	)	
Application No. 10/750,047	)	Examiner: Sean Everett CONLEY
	)	
Filed: December 31, 2003	)	
	)	
For: Method and Apparatus for	)	
Photosensitized Ultraviolet	)	
Decontamination and Disinfection of	)	
Surfaces and Aerosol Clouds	)	
	)	
<u>Attorney Docket No. 42173-017</u>	)	

St. Louis, Missouri 63105-3441  
November 28, 2006

Honorable Commissioner of  
Patents and Trademarks  
P.O. Box 1450  
Alexandria, VA 22313-1450

AMENDED APPEAL BRIEF

Responsive to the Office Action dated March 28, 2006, the Notification of Non-Compliant Appeal Brief dated March 9, 2007, and the Notification of Non-Compliant Appeal Brief dated December 12, 2007, Applicant submits the following Amended Appeal Brief. Applicant has amended the sections entitled "Status of Amendments," "Summary of Claimed Subject Matter," "Grounds of Rejection to be Reviewed on Appeal," and "Argument" to comply with the Examiner's requirements in the Notification of Non-Compliant Appeal Brief. It is not believed that extensions of time or payment of additional fees are required. However, in the event that any extensions of time or additional fees are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned for, and any fees required are hereby authorized to be charged to Deposit Account 50-4444.

**Table of Contents**

Real Party in Interest .....	3
Related Appeals and Interferences .....	4
Status of the Claims .....	5
Status of Amendments .....	6
Summary of the Claimed Subject Matter .....	7
Grounds of Rejection to be Reviewed on Appeal .....	8
Grouping of Claims .....	9
Argument .....	10
Claims Appendix .....	26
Evidence Appendix .....	28
Related Proceedings Appendix .....	29

**Real Party in Interest**

The real party in interest is the assignee of record in this case, Clean Earth Technologies LLC.

**Related Appeals and Interferences**

No other appeals or interferences affect this application.

**Status of the Claims**

Claims 50-60 are currently pending in the application. Following is the status of all claims in the application:

Claims 1-49 (Canceled).

Claims 50-60 (Rejected).

The rejection of claim 50 is appealed by Applicant. A copy of all pending claims is attached in the Claims Appendix.

**Status of Amendments**

No other amendment has been filed subsequent to final rejection.

**Summary of the Claimed Subject Matter**

Independent claim 50, which is the only independent claim involved in this appeal and pending in the application, covers a novel method of decontaminating a contaminated surface by spraying an electrically charged photosensitizer onto the contaminated surface of a person-occupiable space, in an environment open to the person-occupiable space, and illuminating the sprayed surface with light to cause chemical reactions to decontaminate the surface. Claim 50 is supported by the specification as follows:

- “Spraying an electrically charged photosensitizer”: page 6, line 29 through page 7, line 24; Figure 1, Reference Nos. 20 and 24.

- “onto the contaminated surface of a person-occupiable space, in an environment open to the person-occupiable space”: page 3, lines 16-23; page 6, lines 25-28; Figure 1, Reference Nos. 20 and 22.

- “illuminating the sprayed surface with light to cause chemical reactions to decontaminate the surface”: page 22, lines 9-26; Figure 1, Reference Nos. 22 and 26.

**Grounds of Rejection to Be Reviewed On Appeal**

Whether claim 50 is unpatentable under 35 U.S.C. § 103 over Bayliss et al. (“The Combined Effect of Hydrogen Peroxide and Ultraviolet Irradiation on Bacterial Spores”, Journal of Applied Bacteriology, 47:263-269 (1979)) in view of Blidschun et al. (U.S. Patent No. 4,680,163) and Peltier (U.S. Patent No. 5,382,410).

Whether Applicant had good and sufficient reasons for not filing a Terminal Disclaimer in this case prior to the Final Office action when Applicant’s first submission of a Terminal Disclaimer was rejected because Applicant’s Power of Attorney had not been updated and Applicant’s second submission of a Terminal Disclaimer was filed after updating the Power of Attorney.



**Grouping of claims**

Given that there is only one independent claim, claim 50, the claims stand or fall together.

**Argument**

**I. REJECTION OF CLAIM 50 UNDER 35 U.S.C. § 103**

The first ground of rejection to be reviewed on appeal is whether claim 50 is unpatentable under 35 U.S.C. § 103 over Bayliss et al. (“The Combined Effect of Hydrogen Peroxide and Ultraviolet Irradiation on Bacterial Spores”, Journal of Applied Bacteriology, 47:263-269 (1979)) in view of Blidschun et al. (U.S. Patent No. 4,680,163) and Peltier (U.S. Patent No. 5,382,410).

***A. There is no Explicit or Implicit Teaching, Suggestion, or Motivation to Combine the Cited References to Produce the Claimed Invention***

“Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.” MPEP § 2143.01(I). Even where the cited references teach all of the elements of a claimed invention, there is no *prima facie* case of obviousness without a motivation to combine the references. MPEP 2143.01(I) citing In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

However, the mere fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness. MPEP § 2143.01. “Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so.” In re Fritch, 972 F.2d 1260, 23

USPQ2d 1780, 1783 (Fed. Cir. 1992), quoting ACS Hosp. Systems, Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984) (Emphasis in original).

The teaching, suggestion, or motivation to combine the references to produce the claimed invention can either be explicitly implicitly found in the references themselves or in the knowledge of one skilled in the art. “The test for an implicit showing is what the combined teachings, knowledge of one skilled in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” MPEP 2143.01(I), quoting In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

In making an argument that one skilled in the art would have been motivated to combine a particular set of references to produce the claimed invention, an examiner must rely upon objective evidence and make specific factual findings to support this conclusion. In re Lee, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002).<sup>1</sup> However, the Examiner cannot use the claimed invention as a ‘template’ to piece together an obviousness rejection. Accordingly the Federal Circuit has stated that “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

In this case the Examiner has used hindsight reconstruction to piece together a collection of references that allegedly teach the elements of the claimed invention, but has failed to show how one of ordinary skill in the art would have been motivated to make this combination at the time the invention was made. The Examiner on Page 5 of the 03/28/2006 Office action states

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<sup>1</sup> Furthermore, in a non-precedential opinion the Federal Circuit has stated that “conclusory statements of generalized advantages and convenient assumptions about skilled artisans” are insufficient to show motivation to combine references, in the absence of substantial evidence to support this position. In re Beasley, 117 Fed. Appx. 739, 744 (Fed. Cir. 2004) (non-precedential).

that “[i]t would have been obvious ... to combine the teachings of [the cited references] because Bayliss et al. teach the effectiveness of illuminating a photosensitizer, such as hydrogen peroxide, with ultraviolet light for killing bacteria spores on contaminated surfaces.” The Examiner goes on to state that combining the cited references to produce the claimed invention “would allow for the adherence of the photosensitizer onto contaminated surfaces of person-occupiable spaces ... in order to kill bacteria spores that may have contaminated these surfaces.”

However, the Examiner fails to point out any explicit or implicit teaching, suggestion, or motivation, either in the references themselves or in the knowledge of one skilled in the art at the time the invention was made, to combine the cited references to produce the claimed invention. While there are of course many advantages to the claimed invention, the Examiner’s reliance upon these advantages to provide the motivation to combine the references amounts to nothing more than impermissible hindsight reasoning. See In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (teaching, suggestion, or motivation to combine must be found in the prior art and not in the application itself).

A *prima facie* case for obviousness has not been made, insofar as the Examiner has not shown any teaching, suggestion, or motivation to combine the cited references, whether explicitly or implicitly in the references themselves or in the skill of one having ordinary skill in the art.

***B. It would not have been obvious to combine and modify Bayliss et al., Blidschun et al., and Peltier to produce the invention of claim 50 because doing so would render Blidschun et al. unsatisfactory for its intended purpose***

It would not have been obvious to combine and modify Bayliss et al., Blidschun et al., and Peltier to produce the invention of claim 50 because doing so would render Blidschun unsatisfactory for its intended purpose. “If [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification”. MPEP § 2143.01(V), citing In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In rejecting claim 50 the Examiner on page 5 of the 03/28/2006 Office action states that “[i]ncorporating the method of spraying an electrically charged photosensitizer from Blidschun et al. and Bayliss et al. onto a surface of a person-occupiable space, in an environment open to the person occupiable-space ... would allow for the adherence of the photosensitizer onto contaminated surfaces of person-occupiable spaces ... .”

Thus the Examiner proposes modifying Blidschun et al. to spray an electrically charged photosensitizer onto a surface of a person-occupiable space, into an environment open to the person-occupiable space, so that the sprayed droplets contact contaminated surfaces. However, in this particular case there is no suggestion or motivation to combine Bayliss et al., Blidschun et al., and Peltier to produce the invention of claim 50 because the proposed modifications required to combine these references to produce the claimed method would render Blidschun et al. unsatisfactory for its intended purpose.

**1. Droplet size**

The intended purpose of Blidschun et al., as stated in the last paragraph of the Background section (col. 2, line 58 through col. 3, line 33), is to provide a method of sterilizing containers that uses as little sterilant solution as possible by generating droplets of sterilant which are considerably smaller than those that are produced by sprayers. Blidschun et al. specifically state that applying sterilant by ‘spraying’ is unsuitable because the droplets are relatively large (50-150  $\mu\text{m}$ ; col. 2, line 2), which means that a lot of sterilant falls in one area of the surface where a droplet makes contact. If, on one hand, one limits the amount of material that is sprayed, the result is that there are relatively few droplets on the surface. These large droplets are spread too far apart to get adequate sterilization, since the atomic oxygen that arises from the sterilant and which is the effective sterilizing agent does not travel very far before decomposing. Col. 2, line 58 through col. 3, line 23. On the other hand, spraying a greater amount of sterilant to cover the surface more effectively is undesirable because a greater energy input is required to evaporate the additional solution and there is an increased risk that sterilant residue will be left on the surface of the container, which is unacceptable for food packaging containers. Col. 2, lines 14-32.

Blidschun et al. solve this problem by ultrasonically atomizing the sterilant solution so as to produce a large number of very small droplets (<50  $\mu\text{m}$ , preferably 2-4  $\mu\text{m}$  diameter). Col. 3, lines 24-32; col. 4, lines 4-28. These droplets can be electrostatically applied to the surface at a relatively high density so that the limited interstitial space remaining between the droplets is a short enough distance for the atomic oxygen to travel through and kill any microorganisms that do not get directly covered with a droplet. Col. 2, line 58 through col. 3, line 23. The only reason

this high density of droplets can be achieved with a relatively small volume of sterilant is because of the extremely small droplet size.

In contrast, the present application states that for spraying droplets onto a surface (as recited in claim 50), as opposed to remaining in an aerosol form, the droplets should have a diameter that is greater than 1-50  $\mu\text{m}$ . Page 22, lines 6-8 of the originally-filed application. Thus, given that claim 50 calls for “spraying an electrically charged photosensitizer onto the contaminated surface” and reading claim 50 in the context of the specification, this means that the sprayed droplets must be greater than 50  $\mu\text{m}$ . Therefore, modifying Blidschun et al. to produce the method of claim 50, which would require spraying droplets greater than 50  $\mu\text{m}$  in diameter, would clearly render Blidschun et al. unsuitable for its intended purpose.

## **2. Form-fitting electrode and backing**

The extremely small droplets of Blidschun et al. must be applied to the container surface in a uniform distribution in order for the low-volume application method to effectively sterilize the package. In order for the extremely small droplets to be spread evenly across the surface, the container must have a form-fitting backing to serve as a grounding electrode. In addition to the backing, there must also be an electrode that is matched to the shape of the container so that the container is sandwiched between a pair of concentric electrodes (col. 5, lines 4-16 and 57-60) in order to attract droplets to the surface of the non-conducting container (col. 5, lines 17-33). The combination of the two electrodes, matched to the shape of the container with the container itself sandwiched in between, is important for attracting the extremely small droplets to the inner surface of the container in an even distribution. This even distribution of droplets, as discussed above, is critical for implementing the invention of Blidschun et al.

However, modifying the apparatus and methods of Blidschun et al. to decontaminate a “person-occupiable space” would render them unsatisfactory for their original purpose. It would be impractical if not impossible to produce pairs of form-fitting electrodes for every possible “person-occupiable space”, e.g. furniture or vehicles, that one would want to decontaminate according to the method of claim 50. However, modifying the apparatus of Blidschun et al. by eliminating the pair of “concentric electrodes” in order to address this problem would render Blidschun et al. unsatisfactory for its intended purpose. Without the pairs of concentric electrodes that are matched to the shape of container as called for in Blidschun et al., the droplets would not effectively reach the surface of the container and would not be evenly distributed across the surface. This would require the use of more sterilant and/or would result in uneven application of sterilant and incomplete decontamination of the container or excessive sterilant residue on the inside of the container, either of which is unsatisfactory.

The Examiner, on page 12 of his Response to Arguments section of the 03/28/2006 Office action, argues that the methods and apparatus of Blidschun et al. could in fact be used on a person-occupiable space. To support this argument he refers to five-gallon plastic containers that are used to ship bulk quantities of foods to restaurants and the like: “A container of this size is considered a human occupiable space since a baby or small child can fit within the 5-gallon container.” However, it is clear that the phrase “person-occupiable space” of claim 50 is meant to include spaces that are intended for human occupation, notwithstanding the fact that one may be able to stuff an infant or small human into small containers. Examples of the types of items that are encompassed within the scope of the claim are shown in Figure 1 and referred to in the specification on page 6, lines 25-30.



**3. “in an environment open to [a] person-occupiable space”**

Additionally, the apparatus and techniques of Blidschun et al. would be rendered unsatisfactory for their intended purposes if operated “in an environment open to [a] person-occupiable space” as called for in claim 50. The extremely small (2-4  $\mu\text{m}$ ) droplets that are crucial for implementing the methods of Blidschun et al. would not travel very far before evaporating or being blown off course “in an environment open to [a] person-occupiable space”. As stated in the present application (page 22, lines 7-8 of the specification), the droplet size needs to be larger than 50  $\mu\text{m}$  diameter in order to get rapid precipitation of droplets onto a surface. Therefore, modifying Blidschun et al. to operate “in an environment open to [a] person-occupiable space” would render the methods of Blidschun et al. unsatisfactory for their intended purposes, in that the small (2-4  $\mu\text{m}$ ) droplets would be very unlikely to reach their intended target before evaporating or simply losing momentum. Instead, the 2-4  $\mu\text{m}$  droplets that do not evaporate are likely to remain in aerosol form (page 22, lines 6-7 of the specification).

To summarize, because modifying Blidschun et al. to produce the method of claim 50 would render Blidschun et al. unsatisfactory for its intended purpose, it would not have been obvious to one skilled in the art to combine Blidschun et al. with the other cited references to produce the claimed invention. Specifically, producing relatively large droplets of sterilant by ‘spraying’ as called for in claim 50 would make the techniques and apparatus of Blidschun et al. unsatisfactory because the larger droplets would either deliver too much solution or would be spread too far apart to be effective. Similarly, the methods of Blidschun et al., which require form-fitting electrodes designed to closely fit to the contours of a known, predetermined object, would be ineffective on the variable human-occupiable spaces that one would encounter in decontamination of objects in the field. Finally, the extremely small droplets that are required

for successful practice of the methods of Blidschun et al. are incompatible with operation “in an environment open to [a] person-occupiable space” insofar as the droplets would likely evaporate or lose momentum before striking their target and in the latter case remain in aerosol form.

***C. It would not have been obvious to combine and modify Bayliss et al., Blidschun et al., and Peltier to produce the invention of claim 50 because doing so would change the principle of operation of Blidschun et al.***

Similarly, one skilled in the art would not have been motivated to combine Bayliss et al. with Blidschun et al. and Peltier to produce the invention of claim 50 because doing so would change the principle of operation of Blidschun et al.

“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” MPEP 2143.01(VI), citing In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

In this case claim 50 calls for “spraying” photosensitizer “onto the contaminated surface of a person-occupiable space”. As is made clear in the specification of the present application, “spraying” of solution “onto a surface” requires droplets that are greater than 50  $\mu\text{m}$  in diameter. Page 22, lines 6-8 of the originally-filed application. On the other hand, Blidschun et al. state that their method of decontamination of containers requires delivery of droplets that are much smaller than 50  $\mu\text{m}$ , specifically in the range of 2-4  $\mu\text{m}$ . Col. 2, lines 1-2 of Blidschun et al. Furthermore, Blidschun et al. specifically state that other methods of applying decontaminating solution, which produce 50-150  $\mu\text{m}$  droplets via spraying, are unacceptable.

Therefore, modifying Blidschun et al. to produce the method of claim 50, namely by “spraying” droplets that are greater than 50  $\mu\text{m}$ , would change the principle of operation of Blidschun et al. Thus one skilled in the art would not have been motivated to combine the teachings of Blidschun et al. with those of Bayliss et al. and Peltier to produce the invention of claim 50.

***D. Blidschun et al. Teach Away from ‘Spraying’***

“A prior art reference must be considered in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention.” MPEP 2141.02(VI), citing W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983).

One skilled in the art would not have been motivated to combine Blidschun et al. with Bayliss et al. and Peltier as proposed by the Examiner because Blidschun et al. teach away from the invention of claim 50. Claim 50 recites “spraying an electrically charged photosensitizer onto the contaminated surface”.

As discussed above, the centerpiece of the methods and apparatus of Blidschun et al. is to produce very small (2-4  $\mu\text{m}$ ) droplets using an ultrasonic atomization device. Blidschun et al. stress that using an ultrasonic atomization device to generate such small droplets is necessary because “conventional spray nozzles produce droplets which have diameters in the range of between 50 and 150  $\mu\text{m}$ .” Col. 2, lines 1-2 of Blidschun et al. These larger droplets, Blidschun et al. go on to state, leave relatively large, unwetted areas between the droplets that are not effectively sterilized. Note that the present application also clearly states that for spraying droplets onto surfaces (as called for in claim 50), the droplet size should be greater than 50  $\mu\text{m}$ .  
Page 22, lines 6-8 of the originally-filed application.

Given this explicit teaching away from spraying droplets greater than 50  $\mu\text{m}$  for the purpose of decontaminating a contaminated surface, one skilled in the art would not have been motivated to combine the teachings of Blidschun et al. with those of Bayliss et al. and Peltier to produce the invention of claim 50.

***E. One skilled in the art would not have been motivated to combine the cited references to produce the invention of claim 50 because the references are from non-analogous arts***

One skilled in the art would not have been motivated to combine the cited references to produce the invention of claim 50 because the references are from non-analogous arts.

Given that the obviousness rejection of claim 50 was based on a combination of more than one reference, these references come from fields of art that are not analogous to one another nor to Applicant's field of art and thus it would not be obvious for one skilled in Applicant's field of art to combine such disparate references. MPEP § 2141.01(a) ("To rely on a reference under 35 U.S.C. § 103, it must be analogous prior art."). "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

In this case, however, the references all come from widely varying and disparate fields of endeavor and are not reasonably pertinent to the particular problem being addressed by the invention of claim 50: Bayliss et al. (laboratory/research setting using spores in a Petri dish); Blidschun (factory setting, decontamination of packaging materials); and Peltier (device for conditioning air in a building ventilation system). Thus, one skilled in the art would not have

been motivated to combine these references from non-analogous arts which are not reasonably pertinent to the problem with which the inventor was concerned.

***F. The combination of cited references does not teach all of the elements of claim 50***

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP § 2143. Even if one were to combine the teachings of Bayliss et al. with those of Blidschun et al. and Peltier, this combination of references still fails to make a *prima facie* case for rejection under Section 103 because the combined reference do not teach all of the elements of claim 50.

Specifically, the combined references do not teach the element of “spraying”. Clearly Bayliss et al., which discloses experiments performed in laboratory dishes, does not teach or suggest spraying. Blidschun et al., as discussed above, only mention spraying of disinfectant in the background section, and there only to disparage this approach as being inadequate; Blidschun et al refer to their device as having a ‘precipitating head’ (col 6, line 28) rather than a sprayer. Finally, the methods of Peltier do not disclose spraying of materials; instead the materials are “dispersed” or “vaporized” and released into ambient air or an air duct. Peltier and Blidschun et al. disclose forming electrostatically charged mists but in neither case are the droplets projected in a stream towards the object, they are merely released into the air, and in Blidschun et al. there is a separate stream of gas that flows towards the object which carries the droplets to the object.

In contrast, in the present application the sprayer when used for spraying surfaces produces a directed spray of droplets that are projected towards the surface to be decontaminated. The first definition of “spray (verb)” in Webster’s dictionary is “to project spray or something resembling spray on or into”, which comports with the usage in the application for spraying onto a surface.

Therefore the Examiner has failed to make a *prima facie* case for rejection of claim 50 under Section 103 because the combination of Bayliss et al., Blidschun et al., and Peltier does not teach or suggest all of the elements of claim 50.

## **II. DOUBLE PATENTING REJECTION**

The terminal disclaimer filed on May 31, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Application 10/750,048 has been reviewed and is accepted. The terminal disclaimer has been recorded.

**Conclusion**

The rejections under 35 U.S.C. § 103 advanced in the Final Office Action are contrary to law. Furthermore, Applicant has shown good and sufficient reasons for not having properly filed a Terminal Disclaimer in this case prior to issuance of the final Office action. Accordingly, it is submitted that the rejections are improper and Applicants pray for a finding in their favor.

Respectfully submitted,

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**CLAIMS APPENDIX**

Claims involved in the appeal:

1-49 (Canceled)

50. (Previously presented) A method of decontaminating a contaminated surface, the method comprising: spraying an electrically charged photosensitizer onto the contaminated surface of a person-occupiable space, in an environment open to the person-occupiable space; illuminating the sprayed surface with light to cause chemical reactions to decontaminate the surface.

51. (Previously presented) The method according to claim 50 wherein the photosensitizer is a solution, and the step of spraying the photosensitizer onto the contaminated surface comprises electrically charging at least one component of the solution.

52. (Previously presented) The method according to claim 50 further comprising controlling the temperature of the sprayed photosensitizer to enhance the formation rate, mobility, or the decontaminating activity of the photo-products and their ensuing reactions.

53. (Previously presented) The method according to claim 50 wherein the photosensitizer includes hydrogen peroxide.

54. (Previously presented) The method according to claim 50 wherein the step of illuminating the sprayed surface is done with a continuous beam.



55. (Previously presented) The method according to claim 54 wherein the step of illuminating the sprayed surface is done with light having a wave length between about 200 nm and about 320 nm.

56. (Previously presented) The method according to claim 50 wherein the photosensitizer includes a surfactant.

57. (Previously presented) The method according to claim 50 wherein the light includes light of wavelengths between about 200 nm and about 320 nm.

58. (Previously presented) The method according to claim 50 wherein the photosensitizer includes solid or liquid carrier particles.

59. (Previously presented) The method according to claim 50 wherein spraying an electrically charged photosensitizer further comprises spraying an electrically charged photosensitizer using a portable, field-deployable sprayer.

60. (Previously presented) The method according to claim 59 wherein said light is UV light.

**EVIDENCE APPENDIX**

None.

**RELATED PROCEEDINGS APPENDIX**

None.